N. A. C. A. BULLETIN

Section I

Vol. VIII, No. 23 August 1, 1927.

How to Make Cost Accounting Effective

By

C. E. KNOEPPEL,
Director, Bigelow, Kent, Willard & Co., Inc.,
and
Managing Director, Waste Eliminators,
Boston, Mass.

Published semi-monthly by the National Association of Cost Accountants, 26 West 44th Street, New York. Subscription price, $15 per year. Entered as second-class matter, August 28, 1925, at the Post Office, New York, N. Y., under the Act of March 3, 1879.

The National Association of Cost Accountants does not stand sponsor for views expressed by the writers of articles issued as Publications. The object of the Official Publications of the Association is to place before the members ideas which it is hoped may prove interesting and suggestive. The articles will cover a wide range of subjects and present many different viewpoints. It is not intended that they shall reflect the particular ideas of any individual or group. Constructive comments on any of the Publications will be welcome.

Additional copies of this Publication may be obtained from the office of the secretary. The price to members is twenty-five cents per copy and to non-members seventy-five cents per copy.

COPYRIGHTED BY
NATIONAL ASSOCIATION OF
COST ACCOUNTANTS
AUGUST 1, 1927

EDITORIAL DEPARTMENT NOTE

In times of keen competition, economy and efficiency of operation always receive careful study and attention—and the operation of the accounting department to make its work more useful and effective as an administrative tool of control is no exception to this search for economies.

C. E. Knoeppel, the author of the current publication, began his professional career after having worked first as a moulder in the foundry of the Ames Iron Works and as draftsman and designer with the Buffalo Forge Co. His first professional work was as an expert systematizer for the Library Bureau. After that he was associated with Harrington Emerson, New York; twice with Suffern & Son, New York; a partner of Van Gelder, Knoeppel & Young, New York; and from 1914 to 1924, President of C. E. Knoeppel & Co., Inc., New York. He is now a director of Bigelow, Kent, Willard & Co., Inc., and Managing Director of Waste Eliminators, Inc., both of Boston.

Mr. Knoeppel's contributions to the literature dealing with the field of management are well known. Among his books are: "Maximum Production in Shop and Foundry," "Installing Efficiency Methods," "Organization and Administration," "Industrial Preparedness," and "Graphic Production Control."

He was a member of the Hoover Committee on Elimination of Waste in Industry and is now Chairman, Manufacturing Section, Waste Elimination Committee, Society of Industrial Engineers.

This paper was presented before a recent meeting of the Boston Chapter, National Association of Cost Accountants.

HOW TO MAKE COST ACCOUNTING EFFECTIVE

In studying costs and costing during the past twenty-five years, the speaker has to confess that, based on what he *knows* about the subject, he cannot answer the question which constitutes the subject assigned to him to discuss. All he can lay claim to is a series of opinions on this great subject, but he takes courage and finds consolation in the fact that, when it comes right down to "brass tacks," many others lay claim only to opinions on this matter of cost accounting.

The astonishing thing to one who has spent nearly twenty-five years in the cost accounting and industrial engineering field, is the extent to which whims, pet theories, notions, prejudices, local conditions, treasured theories, personal opinions, and the blind acceptance of the past, play a part in and govern our modern cost accounting practice. I venture to say that it would take many evenings to discuss the exceptions and variations to what might be agreed to as accepted practice, if we were to consider the views of all of those engaged in industry in the country who have to do directly or indirectly with costing.

You, therefore, see why I refrain from saying that I can fully answer the question "How to Make Cost Accounting Effective,"

based on what I know that I know. There is one word, however, which epitomizes the answer to the question, and that word is *organization*, which is defined as "the arrangement or structure of parts; the constituting of an organism by a process of development and growth."

In the last analysis, and stripped of all embellishments, business consists of but two things—income and outgo. Balance Sheets and Income Statements are both the prologue and epilogue of business. The purpose of business is to have an excess of this income over the outgo reflected in these statements. It is the job of management to insure the making of this margin of the income over the outgo. How? Through effective cost accounting!

In this connection, Owen D. Young, Chairman of the Board, General Electric Company, said to the National Industrial Conference Board: "I know of no way concerns can make profits unless they render service, and conversely, if they do not make profits, they cannot render service."

Profits are therefore a prime necessity in business in order to render service. Any legitimate enterprise that renders a service or supplies a need, has a right to make a proper rate of profit on its investment. If it cannot do so, something is wrong with that business or the industry of which it is a component part. The time will come when the affairs of such concerns will be looked into. As regards this particular point, Owen D. Young also said in the talk referred to: "Why is it that a concern which does not render service enough to make profits, is permitted to use our labor, of which we have not too great a supply, or our capital, which is always difficult to get, for an unprofitable use to society?"

If the answer is that it should not, and if it is the management function to see to it that there is a proper margin of the income over the outgo, then the question, What is management?, deserves consideration.

Management, it seems to me, is the wise use of coordinated—organized—knowledge. Knowledge is not knowledge unless all important facts are available, reliable and accurate. They are not coordinated unless they dovetail, unless they synchronize logically and properly. "To use," means to put into practice. "Wise," means with wisdom and understanding. To put completely into practice, wisely and with understanding, all accurate facts, logically joined together, regarding industrial matters, becomes the meaning of the task of management. In this two factors are necessary:

1. Organized knowledge
2. Organized personnel

which bring us back to the one word, organization.

Let me now present some facts of a negative character, as they have a decided bearing on this question of making cost accounting effective.

1. There were 100,000 commercial failures in the last six

years causing a monetary loss of $3,000,000,000. Failure statistics show that over two-thirds of the failures are due to causes within the control of management. Might it not be that two-thirds of the concerns which make losses or do only well enough to break even, are suffering from troubles within the control of management?

2. I have yet to find the concern which can answer these five questions:

a. What volume is necessary to earn fixed and semi-fixed overhead?

b. At what point in the business do losses end and profits begin?

c. What capacity is it necessary to keep employed to earn cost of sales, taxes, interest charges, and preferred dividends?

d. How much volume is necessary, in addition, to pay dividends on common stock and build up an adequate surplus?

e. How much net should be earned on investment, as an average, over a period of years, and how does actual attainment compare with it?

3. Business is becoming more complex and precarious all the time, as will be seen from the following:

a. In 1850 productive effort was 80.2% and distribution effort 19.87%. By 1900 the proportions were 59.9% and 40.1%. In 1920 they were 49.6% and 50.4%. It might well be that today they are 40% and 60%.

b. Labor cost is increasing faster than increases in wage earners and in population:

Year	*Population*	*Wage Earners*	*Wages*
1900	76,300,000	4,700,000	$2,000,000,000
1920	106,420,000	9,100,000	10,500,000,000
Increase	39.5%	93.6%	425%

c. Within 10 years after starting, 7 out of 10 concerns are found either defunct, reorganized, or absorbed by others.

4. Excess capacity in plant and equipment in industry is estimated to be 50%, and to cause an annual loss of $3,000,000,000.

5. Waste in industry was appraised at 49% by the Hoover Committee on Elimination of Waste in Industry, one-half of the responsibility for which was considered chargeable to management.

6. Professor Wm. Z. Ripley, in an article "Stop, Look, Listen" in the September, 1926, issue of *Atlantic Monthly*, had quite a little to say about industrial balance sheets and income statements, all of which was an arraignment of managerial statements covering the conduct of business, and showed the great need of betterment in these important business documents.

A picture of this kind shows conclusively the great improvement that must be made by and in management in this the second

quarter of this century. As a basis for this improvement, and that we may get our values expressed correctly, it seems necessary to turn for a moment to the realm of economics. Economy means wise management of money matters. As industry is the spinal column of our national life and the basis of the existence of our people, economics becomes the science of securing industrial and national efficiency, the art of which science must be practiced by management.

Industry is a cooperative mechanism, designed and built to replace individual effort, to supply the needs and wants of mankind, that the requirements of our modern society may be met. Supplying goods and rendering service, *at a profit*, and not profit-making merely for the sake of profits, is therefore the real goal of industrial activity. The engineer has consistently held that high wages and low costs were not inconsistent. He has held that as waste was eliminated, wages could be increased while costs, and therefore prices, could be reduced. We are finding this to be so, and we are also finding that as this widening of the gap between the wage and price posts continues, purchasing power is increased and this in turn stimulates demand. Demand is always on the increase potentially, because there is no limit to human desire. We no more than satisfy one demand than another takes its place. Therefore, it seems to me that the law of "supply and demand" must be changed to the law of "supplying the demand."

In connection with this matter of economics, Dr. Hadley has said that the success or failure of a man engaged in manufacture, in transportation, or in agriculture, depends more upon his skill as a prophet than upon his ability as a producer. This is supported by David J. Jordan, who says that external conditions exert a more potent influence over company profits than do internal conditions. He further says that the gains which come from the ability to foresee the trend of general conditions far exceed the margin of pure profits, which competition holds within narrow limits. Sound economics demand that cost accounting must be effective, and the task of making it so is the task of management.

I am not going to say, even in the light of the foregoing, that cost accounting has fallen down, but I wonder sometimes if it has kept pace with the business procession and meets the demands of the day. The great mystery to a purely professional man is why in so many instances, executives at the top, and foremen at the bottom, give so little real consideration to costs and cost accounting. The difficulty is that in too few cases is cost accounting looked upon as chart, compass and sextant of the business ship. Rather is it looked upon too often as a graveyard of dead facts and figures from which there is no resurrection; a costly system of redtape which yields meaningless, incorrect, or inadequate results; a post-mortem process instead of something which can render effective aid in terms of futures.

It seems, therefore, that it might be well to attempt to organ-

ize our knowledge regarding the use to which cost accounting can or should be put, in order that it may become more effective in meeting the rigid requirements of our complex industrialism of today. These can be considered as theories, opinions, viewpoints, axioms, laws or principles, or whatever you might choose to call them.

These, let us say, axioms, are as follows, as I see the picture:

1. *The relation between cost and price is not arbitrary nor fixed.* The old theory that cost plus something equals price is an exploded theory. Many times it is cost minus something equals price. Cost of making tires of a given size may vary, but price is the same. Ford has reduced his price before he reduced the cost to meet the price decrease. External influences of competition many times have more to say about price than cost statements. These facts were clearly recognized by an Englishman who said: "The great need of the business world is a sound price, a price which bears direct relationship to economic facts. It is the discovery of that price which constitutes our biggest problem."

In other words, from the standpoint of making cost accounting effective, it must be recognized that economic facts govern price (not costs which are only indicators), and one function of cost accounting is to determine and evaluate economic facts.

2. *Profit should bear a relation to effort expended and its facilitation and not to total cost.* Effort expended and its facilitation (labor and overhead) are the items to which to apportion or relate profit, as it is the true investment. Material itself is not the prime factor; *what is done to it is.* Material is merely merchandised or jobbed and stored, and the viewpoint should be as if the buyer of the product purchased the material and supplied it, on which no profit was to be charged. If this is not done then the price asked for complicated work will be *too low,* and for simple, easy or tonnage work *too high,* resulting in loss of money in the one case, and loss of business in the other. This will clearly be seen if attention is given to the following comparison:

Job	A	B	C
Material	$400	$600	$800
Labor	300 } 600	200 } 400	100 } 200
Overhead at 100%	300 } (x)	200 } (x)	100 } (x)
Total Cost	$1,000	$1,000	$1,000
Profits at 20%	200	200	200
Price	$1,200	$1,200	$1,200
Profit on (x)	33⅓%	50%	100%
Effort and facilitation content (x)	60%	40%	20%
Total cost	$1,000	$1,000	$1,000
Profit at 70% on (x)	420	280	140
New price	$1,420	$1,280	$1,140
Price change	+$ 220	+$ 80	—$ 60

A better yardstick for measuring profits will help to make cost accounting more effective.

3. *Variations in prices of important or basic materials should not be included in cost.* In one of the industries of the country, large quantities of copper, rubber, lead, tin and cotton are used. If as to any one plant in this industry, there is high priced material on hand on a falling market, heavy losses are taken. On the other hand, if low priced material is on hand on a rising market, excessive profits are made. The one helps to balance the other. The swings are cyclical. They may or may not be a "within the year" proposition. They are without reference to manufacture, the efficiency of which may be constant during the period of loss and that of profit. Unless these savings are isolated and treated separately, both cost and price calculations may be misleading and dangerous, and as a result accounting cannot be effective. To make it so, material costs should be carried to inventory at time of receipt at cost, and in work in process at standard cost or market price at time of use. The differences can be cleared to a Purchasing Profit and Loss Account.

4. *What is produced regardless of volume or capacity should not absorb all overhead expenses.* A sales manager once said to me that if he used cost estimates on which to base prices when business was operating at 40% to 60% of capacity, his prices would be so high as to result in his losing orders. On the other hand, he stated that when business was operating at 100% to 120% of capacity, cost estimates were so low that a normal profit added to them meant prices lower than he knew he could get for his goods. In both cases he threw the cost estimates into the waste basket, and made prices which he was reasonably certain would secure the sales. He further stated that only when the business was operating at 80% to 85% of the capacity could he rely on the cost estimates, and he priced accordingly. It all gets back to the matter of whether all of the overhead is to be applied to one-half or twice the normal production. As in the case of materials, these volume or capacity swings are cyclical. They may or may not be within the year. They are without reference to manufacturing, the efficiency of which may be constant during abnormal swings. To make cost accounting effective from these angles, it is necessary to standardize overheads on the basis of what is a normal capacity, and take the under-earned or over-earned burden into a Volume or Capacity Profit and Loss Account.

5. *Direct Costs Should Not Absorb Waste, Idleness, and Inefficiency.* In a hearing before the Federal Trade Commission in 1918, I presented this principle: "To place the burden of inefficiency and waste on the shoulders of those who are responsible for that condition, so as not to include it in prices paid by the consumer, costs of operation should be predetermined on the basis of practical standards, within the attainment of workmen, machine, department, or plant. Any difference between the actual

costs, and the standardized costs, should be carried monthly into a departmental cost adjustment account and closed into profit and loss at the end of the year." Savings made would naturally be an offset to these losses.

If costs are handled on this basis, we can isolate waste, idleness and inefficiency, and thereby make cost accounting more effective.

6. *Overhead should not be apportioned to labor plus material.* It should not be necessary to mention this "don't" in this day and age of advanced cost practice, but every so often we meet this kind of burden apportionment. The effect of this plan is to make the work with the greatest relative amount of material cost too much, while work with the greatest relative amount of labor will cost too little. To make cost accounting effective, direct material should not enter into the consideration at all in apportioning burden.

7. *Overhead should not be absorbed by the labor dollar or hour only.* This is the day of machinery in industry. Equipment is more and more becoming a factor in the making of goods, and because of this fact, must be considered in costing. Machinery takes the place of labor. It is composite manpower or labor, and as such should absorb its share of the overhead costs. The balance can be apportioned to the direct labor hour or dollar, it does not make much difference which, although my own preference is for the hourly basis for both machine and man. On such a basis as outlined, cost accounting becomes more effective.

8. *Blanket overheads should not be used for all departments.* It should be unnecessary to put forth this contention, but some still cling to this antiquated basis, so a word must be given to it. An average cost means that some items cost more and some less, and cost accounting to be effective must reconcile the difference. This statement is particularly appropriate as to depreciation rates.

9. *Ratios of indirect or non-productive costs to direct or productive costs are not a gauge of efficiency.* Relation of actual results to standard or budgeted results states the relative accomplishment, which is the real gauge of efficiency. Comparing a variable with a variable means little. To make cost accounting effective, variables should be compared against definite measuring sticks.

10. *Expense comparisons should not ignore relative performance or results.* To say that the cost of rivet blanks increased in one month as against another, without at the same time comparing the rivets driven in the same periods (number and kind and time), is to say what may not be true. Cost accounting will be made more effective when increases and decreases in overhead costs are equated in terms of relative performance or results produced by the outlays.

11. *Blanket costs in terms of weight, count, or length are not true costs.* A large structural concern received a contract for building and erecting an office building. It estimated the various costs on a tonnage basis, and when the work was finally costed, it

was found that a heavy loss had been sustained. Investigation showed that the relative amount of labor, and the varying degrees of complexity of work, had not been properly considered. All costs were estimated at flat rates or averages per ton and the complicated work to be done was figured at too small an amount. Cost accounting can be made effective only when the nature of the work to be done and the time of labor in such work are taken into consideration in estimating and apportioning overhead thereto.

12. *Getting the costs of buildings and equipment into cost of production should not be governed by expediency, by what is convenient to do, or ignored altogether.* Getting buildings and equipment and facilities into the operations is as important as including outlays for labor, material, and overhead. Ignoring all the learned considerations of wear and tear, obsolescence, wasting assets, and the like, the fact remains that a building or machine or tool is composite or stored up labor, the same as coal is stored up carbon. A machine is built to replace four workmen, and whenever or wherever it operates, four workmen are operating. If they were working in the flesh, there would be no question as to the inclusion of labor cost. Should it be any different when it comes to the machine? A building, like a machine, is composite labor, in that it represents the work of people, the cost of which is as definite as if they were at work in one place at one time. Why put the cost of labor and material and outlays for overhead into cost of production on a definite and supportable basis, and then put the cost of buildings, machines and facilities into cost without reference to relative use, time of life, and final disposition of them? What excuse is there for any evasion of the issue? Cost accounting will be much more effective when we get down to a more common sense and less "high brow" consideration of depreciation.

13. *Value of capital assets should not remain fixed.* In practice, the rise and fall in wages, salaries, interest, and cost of materials are reflected in the prices we pay for the products of industry. When it comes to capital assets, the rule is original cost less depreciation. If we assume that the dollar is worth 67c. in terms of 1913 when the dollar was worth 100c., then a building erected in 1913 at a cost of $1,000,000.00 would cost $1,500,000.00 today. On the basis of a 12½ year depreciation there would be $1,000,000.00 in the reserve for depreciation in 1926, and if replacement was necessary, owners would have to supply $500,000.00 from surplus or out of their own pockets, because over the years, in the prices paid for goods, customers had not paid it. On the other hand, a plant costing $1,000,000.00 now will cost $670,000.00 when the dollar is again worth 100c. If this occurs in 12½ years, there will then be $1,000,000.00 in the reserve for depreciation, and if replacement is made, $330,000.00 would be left in the reserve account, which means that in prices paid for goods, the customers over the years had paid too much by this excess.

This raises the question: Is it the investment in the property,

or the property itself, that we want to replace? If the latter, then the capital assets must rise and fall with the rise and fall of the purchasing power of the dollar, and depreciations adjusted accordingly through the use of a yearly index figure. Effective cost accounting in the future will have to reconcile these differences.

14. *Profit or loss is not a single item without reference to relative contribution of sales, purchasing, manufacturing or financial side of the business.* Profit or loss is a composite figure, made up of contributions of the main divisions of the business. A manufacturing division operating at 90% efficiency, is a 90% division, whether market prices of material are up or down; whether plant capacity used is 60% or 160%. Operating efficiency is a yearly matter, whereas material prices and volume swings are cyclical factors. Compare costs in two plants, one operating one-half of the time and the other operating full time, and the logic of the above contention will at once be apparent. This will also be the case if we compare costs of two plants in which one is using high priced materials on a falling market, and the other, low priced materials on a rising market.

There are financial transactions, like purchase and sales discounts, interest on borrowed money, and the like, that are without direct reference to making or selling. The financial side is a source of profit or loss, and the extent and reasons should be known.

Cost accounting can be effective only when relative contributions to profit or loss are definitely calculated and kept separated. The praise and reward for profit making, and betterments in places where there are losses, can then be given and arranged for. Why? Because responsibility is a matter of where and how much.

Consider how much more effective cost accounting will be when we can read profit and loss statements as follows:

Item	*Profits*	*Losses*
Volume or capacity variation....	$25,000.00	
Material variation		$100,000.00
Price variation		10,000.00
Waste and inefficiency		10,000.00
Financial		5,000.00
Manufacturing	150,000.00	
Totals	$175,000.00	$125,000.00
Losses	125,000.00	
Net Profits	$ 50,000.00	

15. *Interest on investment and interest on borrowed money are not cost charges.* Net profit is interest on the investment, if it amounts to the same as the legal rate would yield. If it is greater, then there is a "real" profit over the legal return. If less, then the business has lost money as compared to investments in

bonds or mortgages. This is a clear cut way of looking at it. On this basis it can be said that any excess over the going interest rate constitutes a reward for the risks, uncertainties, and the complexities of modern business. It requires no elaborate bookkeeping to view earnings from this standpoint. Furthermore, to put interest on investment in cost is to take a profit before it is earned, and would be equivalent to demanding interest for the use of money in advance.

Money is borrowed when there is insufficient capital. Interest on borrowed money is paid in lieu of interest or dividends on capital invested in the business, which latter items are not cost charges. Is there any difference when it comes to borrowed money as against invested capital? Cost accounting to be most effective must reconcile these two viewpoints.

16. *Accounting for profit calculation and tax computation should not be limited nor governed by the earth's travel around the sun.* Business does not stop at any given point and start at one immediately thereafter. It is a continuous process. A month-to-month basis no longer serves the needs of modern business. Ending things on December 31 of each year is convenient as a milepost, but such posts do not mean anything, except that there is a year in between them. Business is distinctly and basically cyclical, particularly as to sales and purchasing, which so directly influence and govern production. According to statistics, cycles have been divided as follows:

1	taking 1 year,	or	1	year
1	taking 7 years,	or	7	years
1	taking 9 years,	or	9	years
4	taking 2 years,	or	8	years
4	taking 6 years,	or	24	years
5	taking 4 years,	or	20	years
6	taking 5 years,	or	30	years
10	taking 3 years,	or	30	years
32	**Totals**		129	

Average years per cycle..4 years each
Largest number .....3 years each

A current three year average, by adding and dropping a year, would best present a real picture of business, and cost accounting on this basis would not only be more effective, but mean much more of comparative value than it does now.

17. *Statements showing this month, last month and year to date comparisons should not show values only.* Percentage comparisons should also be shown. The actual current showing as to any item should be compared against the estimated or budgeted item for the same period, with the variation in value and percent definitely stated.

18. *Cost statements given to foremen and superintendents*

should not include items over which they have no control and for which they are not responsible. The proper way to kill a man's interest in cost statements is to give him figures which have his operations and those of others all mixed together. Sales costs might be informative to a foreman, but they mean nothing to him from the standpoint of something he can concentrate on. The viewpoint to take is that of treating each foreman or superintendent as if he were in business for himself, and to give him cost statements as if he were charged with the amounts and had to pay for them out of the operations of his department or division as if he were a business man. This will help mightily in making cost accounting much more effective than it is today.

19. *Freight and express out, returns and allowances, discounts given and received, and interest received should not be considered as cost items.* In order to reduce sales to net income and to put them on a comparative basis, freight and express out and credits for returns and allowances should be deducted from gross sales. Discount and interest transactions are clearly financial transactions, as an analysis will clearly show, and should, accordingly, be treated as such. Cost accounting can be more effective when these items are treated as suggested.

20. *New construction, bringing out new lines, designs and major repairs should not be done in busy times.* Such work should be done in periods of low prices and proper deliveries for materials, adequate supply of labor, and when the supervisory force has time to take care of such items. Buying when others are selling is much more economical than doing so when others are also buying. Carnegie clearly recognized this as a good principle. The *New York Times,* in an editorial published May 15, 1921, said: "In times of depression and quietness of trade like the present, Andrew Carnegie used to increase the efficiency and capacity of his works in preparation for the better times which have never yet failed to come to this great and growing country. This was the manner in which he put himself in the position to sell at his own price the plants he had built when labor was plenty, because others were reducing their staffs and white-leading their machinery."

Effective cost accounting will show when to do these things and when not to.

21. *New capital should not be secured until every means for resurrecting dead capital have been exhausted.* It is too easy to get money in this great country of ours. If a need for money arises, the immediate desire is to borrow on a past showing, or put out a bond or stock issue. "Barron's," of March 31, 1924, said: "Here is a statement which might have been made by the most conservative President, Chancellor, or Prime Minister for the past two centuries of modern history. The Nation that finds an easy way to lay its hands on capital in order to spend it is going into the bankruptcy court—capital, if used for anything except specific and economic purposes for which capital ought to be used,

for renewing capital, for expanding the capital force of the country—is being misused."

This statement was made by the Ex-Premier of Great Britain (Ramsay MacDonald, Socialist). We can substitute the words "business" and "plant" for "nation" and "country," and his statement is applicable to every industrial executive and financier in the country in their work of borrowing and loaning money. In more cases than is known to banker and executive, money in the form of "dead capital" can be found right in the business by:

1. Speeding up turnover of goods in process
2. Intensive follow-up of receivables
3. Reduction in raw materials carried
4. Sale of surplus equipment
5. Salvage of obsolete, scrap, and excess materials
6. Discounting of bills
7. More rapid disposition of finished products
8. Renting of unused floor space
9. Working plants or departments two or three shifts
10. Subletting part of work plant is unable or unfitted to handle
11. Improvement of methods and processes
12. Rearrangement of departments or plant
13. Better material handling
14. Supplying incentives to and strengthening personnel
15. Standardization of operations and equipments
16. Simplification of lines, styles, and products

Effective cost accounting can bring to life much that now lies in the capital graveyard.

22. *Administrative expenses should not be considered as being entirely commercial in character.* In reality, there are no administrative expenses. In the last analysis, expenses are either incurred for making goods or for selling them or for doing both. What are known as administrative items should, therefore, be apportioned to the division which is served by such expenditure, by budgeting this distribution and charging accordingly. There is another side to it. The asset side of the books shows capital employed in the business. Inventory is capital employed. It takes labor, material, manufacturing overhead, *and part of the administrative overhead* to put goods on the shelves or in the Shipping Department. Consequently, inventory should bear the proportion of the administrative costs which help to make the goods.

It would be well to keep the administrative costs as at present, then credit them out by charges to selling and making. Manufacturing and sales overheads should show as at present, but in addition, there would be added to each the apportionment from administrative overhead.

Treatment on this basis will help to make cost accounting more effective.

23. *Viewpoint in business should be that all income is outgo and not just cost, and profit or loss.* From the standpoint of the modern business, particularly with budgeting in mind, outgo should be considered as made up of all items of expenditure made, provided for, or retained, as follows:

1. Addition to surplus
2. Apportionment from surplus for expansion, new construction, or major repairs, or the like
3. Common dividends
4. Preferred dividends
5. Interest on borrowed capital
6. Selling expenses (plus apportionment of administrative)
7. Manufacturing expenses (plus apportionment of administrative)
8. Direct materials
9. Direct labor

No single one of these nine items can be left out of consideration, without doing a business an injustice. Safety of a business demands the building of an adequate surplus. Perpetuation of a business calls for making the changes which modern progress demands, and this should be done out of surplus. Unless owners of a business are to be paid fair dividends on their investment, what incentive is there for them to assume the risks and uncertainties confronting business of today? Capital cannot be induced from outside investors unless the earning and dividend record is sufficiently attractive. Interest on borrowed money must, of course, be paid, as well as the principal. Are these items any less important than merchandise creditors or salaried and wage employees? Should not the business, therefore, be treated as an entirety? If material is not paid for, vendors will stop supplying same. If wages cease, workers will quit. If taxes and insurance are not paid, risks are run. Should there be any difference when it comes to stopping the paying of interest on borrowed money and dividends on preferred stock? Is the investment by banks and outside investors any different than owner investment up to a certain point? Is not an addition to surplus as important as setting up reserves for depreciation?

The above does not mean that our accounting should be changed as above outlined, but it does mean that if the viewpoint outlined is generally accepted and given more attention, cost accounting can be made more effective.

24. *What a business should earn should be determined and results compared against it.* One of the most difficult questions confronting a business is to determine what a fair profit is. Not only must the needs of the business be kept in mind, but the effect of keen competition and the cut-throat pricing sometimes indulged in, in which profit-making is subordinated to getting the business at any cost. When those in industry wake up to the fact that the

cost of unintelligent competition is paid for by them through taking less in profits or no profits at all, *and that customers get the gains*, they will then give more consideration to what is a fair return, and work towards securing it. If it is definitely known what should be earned, and actual earnings are compared against the standard, greater efforts are bound to be made to secure the proper margin.

As regards the rate of fair return, it would seem that for the risks, uncertainties, and complexities of business, a fair return on investment should be from two to three times a safe or guaranteed return on bonds and mortgages, *as an average, over a period of years*, or from 9% to 20% in terms of one turnover yearly of sales to investment. A distinct service can be rendered to industry, and cost accounting can be made more effective, when necessary earnings are determined and *budgeted*, and actual results compared against them. To hit a bull's-eye it is first necessary to have a bull's-eye.

The foregoing treats of policies and methods to make cost accounting effective, constituting one phase of organization, that of getting together the facts covering cost knowledge. To properly view another angle of organization, let me use an automobile as an illustration. A car at the curb is mere mechanism, necessary but useless as it stands, because static. Put gas, oil, and water into the car and we have mechanism plus motive power, but the combination is still static, because there is no driver to run the car. Only when driver, motive power and mechanism are synchronized does the combination become dynamic. Likewise with cost accounting. The type of organization for cost work, or arrangement of the various functions, constitutes mechanism, but as such it is static. Provide "paper work" or methods (which we have been discussing) which is motive power, and the two remain static because there is no personnel as yet. When proper personnel (driver), right methods (motive power), and correct type of organization (mechanism), are provided, however, the combination becomes dynamic.

In this connection, and keeping in mind that the foregoing has considered methods and policies, the following laws of organization, as regards both type and personnel, will be found helpful.

A. Objective—Working up a tentative plan with reference to the ultimate cost development desired.

B. Greatest Complication—The determination of the most complicated phases of the objective.

C. Concentration—Placing in each division of the cost work all of the factors which affect the performance of the division in question.

D. Individualism—Placing in the hands of one person most competent to handle the work, one or more divisions of the cost work.

E. Mental Capacity—Dividing work in a cost organization

with reference to the knowledge and ability that will be required of a man in charge of one or more divisions of cost work.

F. Specialization—Dividing work so that a man may operate in limited fields, rather than cover many diversified fields, in order that a few things may be done well, rather than a large number superficially.

G. Responsibility—Holding a man responsible for the total proven results he secures in his division, and not for the manner of working in securing these results.

H. Permanency—Training men to fill positions other than their own and providing under-studies so that changes in an organization may easily be made without disruption.

I. Cross-Fertilization—Giving each man in the cost organization some opportunity during the year to know the methods and work of the departments of the plant that cost work influences and is influenced by.

J. Relationships and Instructions.—Providing a man with a clear-cut conception of the relationship existing between himself and those he is associated with, as well as with a written outline of duties, functions, responsibility, and results expected and methods affecting his work.

K. Personnel—Analyzing the requirements of given positions and finding men whose qualifications match the given requirements.

L. Staff and Conferences—Creating an analytical and advisory body in a cost organization to cooperate with the executives, as well as with a conference program, in order to provide for discussing the major matters up for consideration. The Hoover Committee report, "Waste in Industry," contains the following excerpt from the introduction: "The Committee realizes that before there can be a material reduction in the sum total of waste in industry, much earnest, painstaking work must be done. The solution of such a problem is not one of hours or days, but of years. Fundamental changes in our economic, financial, managerial, and operating concepts and practices will be required. There will be need of both cooperative and individual effort. As regards groups, each must frankly face its own responsibilities and meet its own duties. Each individual—plant executive or worker—must discover his own opportunities and then accept responsibility for performance."

Please note the phrase, "*fundamental changes in our economic, financial, managerial, and operating concepts and practices will be required.*" Has this statement a real meaning for industrial executives and financiers? Let me answer this question by ushering you into a meeting of the directors of a large company in its offices high up in one of New York's sky-scrapers. The men around the table—all able and prosperous men—register looks of contentment and pleasure, for the day is dividend day, and there is ample cash in the bank, and the books show a large surplus. At the side of

the chairman is a man who is not a stockholder, therefore not a director, and who attends directors' meetings as an observer only. After transacting the regular business of the day, the motion is made to declare the regular dividend. Before the motion can be put, however, this observer quietly remarks, to the astonishment and indignation of all, that he would strongly recommend the passing of the regular dividend until the next regular period. Pressed for his reasons, he states that the facts in his possession warrant him in predicting that the situation will shortly become an adverse one, and that the financial position of the company would be strengthened by passing the dividend. His advice prevails, the dividends are not declared, but the meeting ends in disappointment and gloom. Later, this observer's predictions came true and then he was commended for his vision and farsightedness. *He was the controller.* He knew more about the business than the directors did. They had the power to declare dividends, but they did not do so. He did not have the power to stop them, but he did so by his better knowledge of the business.

Quietly and slowly but surely, there has been an evolution at work, an evolution of production control up from foremen to our modern Production Control Departments in charge of able supervisors; an evolution of financial control down from the old type of treasurers to our modern Financial Control Departments, in charge of able Controllers. The next step—a step already taken in a few instances—is the merging of these two functions of control into one of super-control, viewing a business in its entirety, from market analysis through to shipping platform; a super-control not only considering the business in question, but the industry of which it is a part, and industry, commerce, and finance as a whole. This has all come about because we have passed through certain definite eras—machine effectiveness, manpower effectiveness, management effectiveness, distribution effectiveness (the one we are now in)—with the one ahead being that of increasing the effectiveness of invested and, particularly, credit capital.

The keystone in the structure of supercontrol is the *progressive budget;* the business plan of affairs which sees to it that profit is as important to earn as wages; which is as much concerned with the future as the past; which takes into consideration financial and market requirements on the one hand, and the development of the budget and its current and graphic control on the other. In this work of budgeting, cost accounting becomes an absolute necessity, particularly the type of cost accounting in which standard costs are a part, and I do not mean standard costs as to overheads only. Such a function of super-control, of which budgeting is the keystone, can be a real "staff organization" to the business in question, and the one in charge of such an important work, whether he attends directors' meetings or not, can exert a most healthy influence on the conduct of the business.

Much in this presentation may appear radical and revolution-

ary, yet if it is considered in terms of the great changes which have come over industry in the last twenty-five years, it will be seen that radical and revolutionary changes are coming; in fact, some of them are here. It behooves farsighted executives to seek ways and means to interpret the "handwriting on the wall." The cost accounting that will be effective in the future will be the kind which can answer the question—what are the results going to be? What is tomorrow going to mean to the business? Historical costs are going to give way to prophetic costs. Accounting for the future will replace the accounting for the past. The human ostrich cannot see all this perhaps, but, after all, he is only kidding himself so that he cannot hurt the work as a whole.

In closing, I will not pretend to say what I see ahead in the next twenty-five years in the cost accounting field, but in looking backward over twenty-five years, I feel safe in saying that if the progress to date is any fair index of the progress that is to come, we are going to witness a development of the utmost importance and value to industry, to each unit, to each group, to industry in its entirety—a development which may seem startling at first, for it will be a cost development that will constitute PROFIT ASSURANCE!